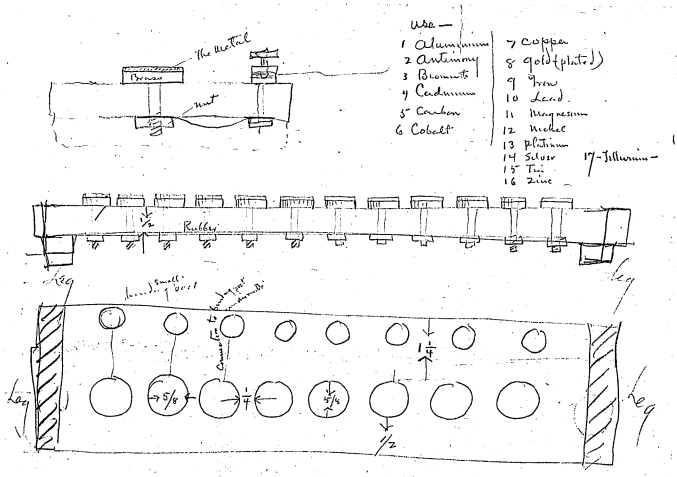
Unbound Notes and Drawings (1902)

This folder contains dated notes and drawings from 1902, as well as undated material possibly from the same year. Included are drawings by Edison of experimental apparatus pertaining to x-rays, electromagnetism, and telephony. There are also documents relating to fluorescent lighting, electric meters, phonographs, and an electric furnace. Many of the Edison drawings include dates, notations, or contributions by John F. Ott. Several contain notations indicating their use in the patent interference case, *Edison* v. *Macdonald* (see Legal Department Records, Legal Series), and some bear an archivist's inscriptions.

Approximately 60 percent of the documents have been selected. The items not selected consist primarily of notes by unidentified laboratory employees on automobiles, batteries, and electric meters.



Multiple Metal Strip

[ON BACK OF PRECEDING PAGE]

Drawing finished Feb. 11 1902
J. B. O'H.
Stock Order
1243

Multiple Metal Strip

Model Finished

There is to be a lot of these needs —

of following Metals, one of each — must not be soldered if
but screw together force one into other —

Aluminum	Carbon (arc)	Iron	Zinc —
Antimony	Cobalt	Lead	
Bismuth	Copper	Magnesium	
Cadmium	Brass	Nickel	
		Silver	
		Tin	

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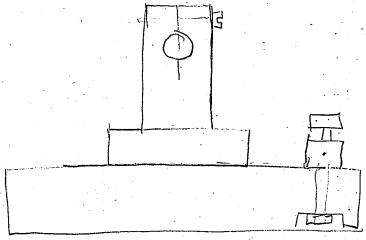
Drawing furnished Feb 12 1962
Not in order
Feb 12 43
J.F.O.

Bobbin

Model Furnished



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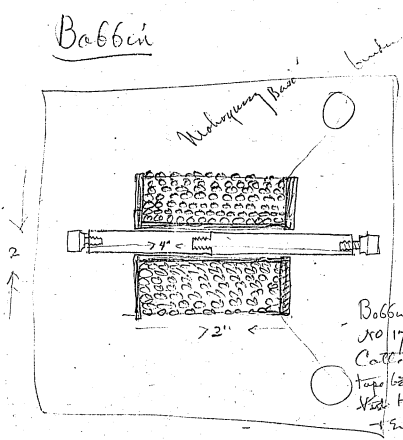
Drawing Finished Feb 12 1902 J.S.C. Shop Order 124

Holder for Chemical Crystals

Model Finished

Bobbin



The removable Core is made of two metals Bottom the Ends have Clamps of same metal,

Bobbin wound with No 17 or 18 double Cotton Copper wire — tape between each layer Use Hard Rubber tube at Ends

fast bobbin down with band —

Long Magnet

(1)

get 300 feet of smooth charcoal iron wire about 1/8 thick or the nearest to that size sold commercially — use Habenhaw rubber tape and tape it from end to end ~~that is~~ go over taping the tape 1/8 inch — after the whole is taped tape it again in the opposite direction with 1/8 inch lap = all except 4 feet of each end = then ~~wind~~ wind a single layer of double cotton covered copper wire from end to end testing it with a needle & compass as it is being wound so there will be no crossing = wind to within 4 feet of each end — use No 20 B&S or near that size = after the wire is wound

[ON BACK OF PRECEDING PAGE]

Drawing Furnished
date 13 1903
Patent Order No 1243
J. E. B.

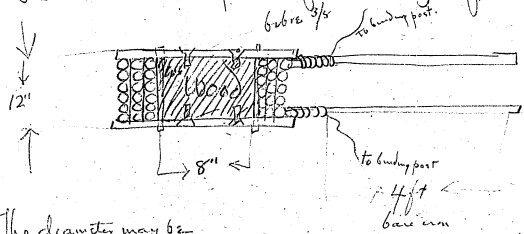
Ring Magnet

Model Furnished
April 18 1902

2

Tape it twice as you did the base now wire —

Then make a spool of Vulcanized fibre —



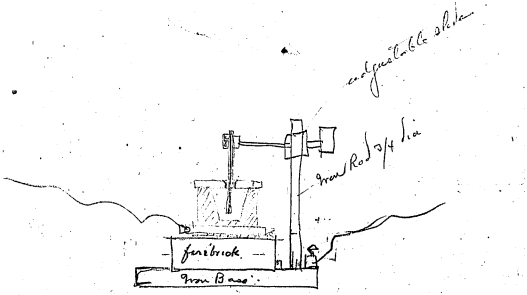
The diameter may be anything to suit so the 300 ft can be wound on ~~[illegible]~~ tape each layer —

But it on a wood base

wire when finished will be 1/4 in diameter

A spool will cove 8 in 4 in wide 2 1/2 in deep will take 300 feet of wire

13 in full diam

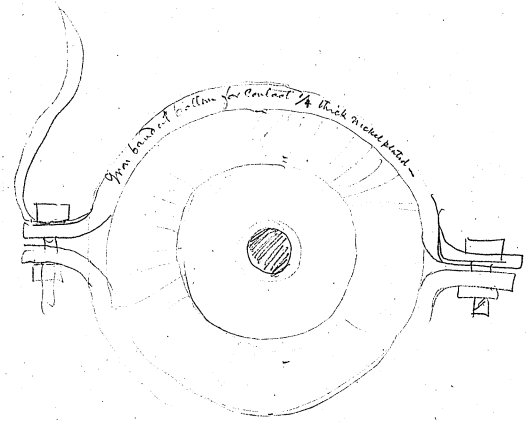

fire brick
Iron Base

[ON BACK OF PRECEDING PAGE]

Drawing furnished
Feb 14, 1902
Shop Order 1243
J.G.O.

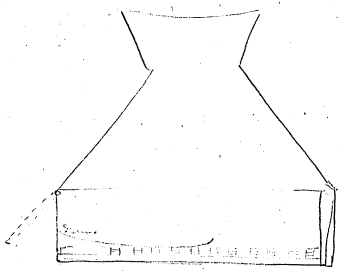
Electric furnace

Model Finished


Iron band of bottom for contact 1/4 thick wrought plate

D
1902
"Fluoroscope"

Fluoroscope & Slides



Fluoroscope — for the new mahogany slides with mica boxes — Dark box made of 1/4 mahogany or rubber — with spring inside to hold the slide in position = The front is open & it is to be closed by shoving in

a frame over which black paper — metals & other substances are fastened, then the slide with crystals are shoved in — the spring lifts at slide is shoved in + holds the opaque plate & slide in position, then the door is closed, there should be gasket on opaque front + door so no light can enter,

The model slide will be given you in few days + you can build of Chromoscope from it to right size — I may want to insert or permit the slide a Dry photograph plate in a frame so the spring should be long + Elastic to take the 3 framed in —

This wants to be well made as there will be several hundred slides to go in & out, & it must be Easy & quick to change them —

The Carpenter is to make 300 slides of which 50 slides are to be put in a box. This will make 6 boxes these boxes should have cleats so Each slide when put in box goes in Easy & dont touch the other slides. The box should have a Cover & handle —

There are I think 40 or 50 places on Each slide for Crystals

4'

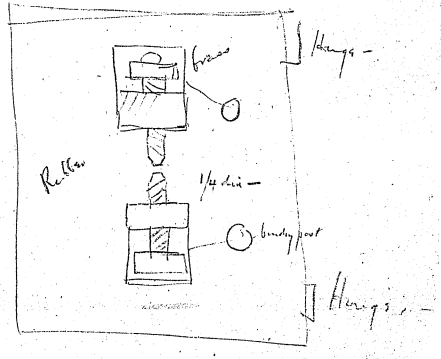
This will give about 14000, different Circuits, two Mica washers are used for each hole, the only Chance Mica & make a punch, also a dieing device to make the wave ring Cheaply—

[ON BACK OF PRECEDING PAGE]

Fluoroscope & Slides

Furnished

Model April 24, 1902


Hinge
Roller
1/4 dia
bending post
Hinge

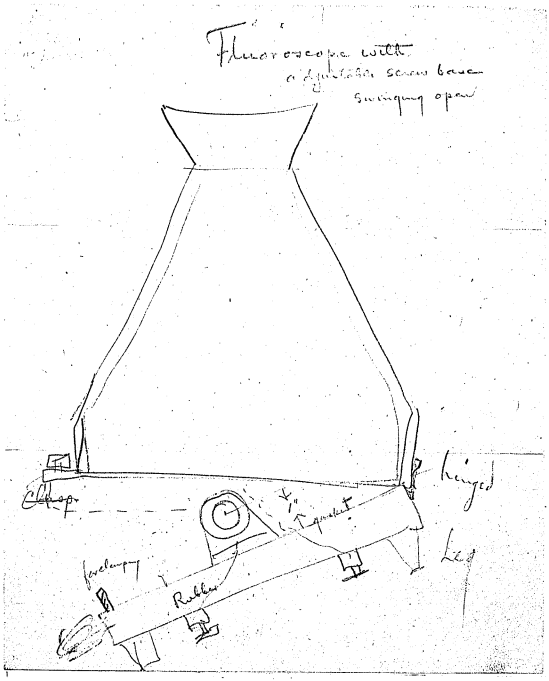
[ON BACK OF PRECEDING PAGE]

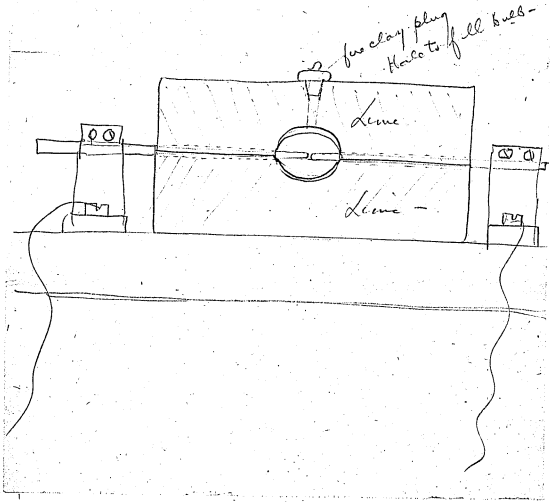
Examiner Denning
Oct 21 1902
Order No
1243

J. G. Gill

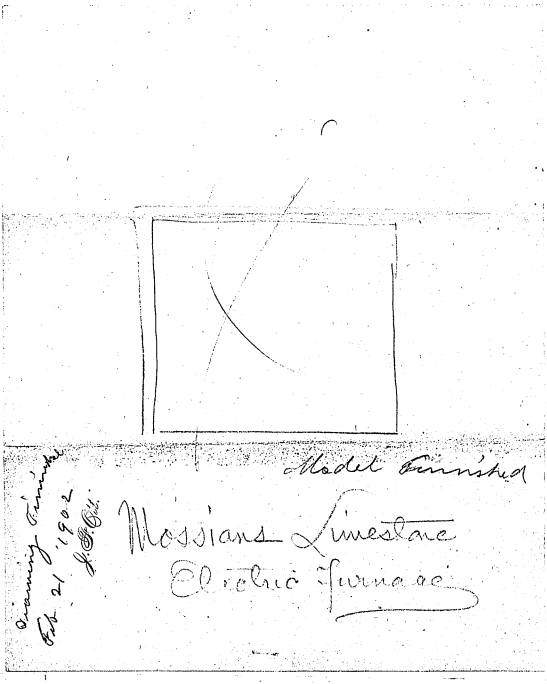
Microscope with screw base

Model Furnished


Fluoroscope with
adjustable screw bar
swinging open
hinged
Clamp
gradient
Leg
footrest
Rubber

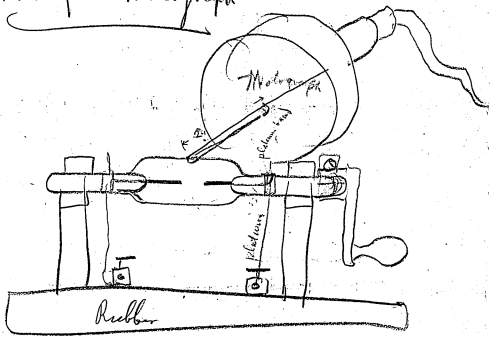

for clay plug
Hole to fill bucks -
Lime
Lime -

[ON BACK OF PRECEDING PAGE]

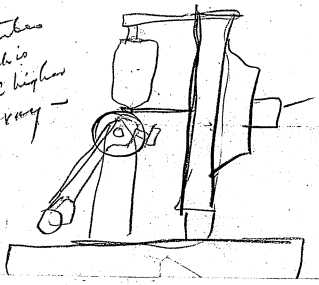


X Ray tube Mutoscope

D
1902 "X-Ray"



1/2 dozen tubes
2 of which is
Exhausted higher
than X ray —



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X Ray Tube Motograph

Model Furnished

Furnished Feb 24 1902

Fanning J.E.C.

D. "West Orange
1902 — Lab.
Order No. 6 — Notes" Feb. 25, 1912

M. John Ott —

Ship to T. A. Edison J.F.M.

Mat. Nickel Exploration

How Ship When

Terms:

		Change dip needles so that good		
		ultimate will be on scale —		
		close holes in case —		
		Change support — or ring.		
		Repair compasses & dip needles		
		as necessary —		
		Make recording device, on		
		for samples if satisfactory,		
		1/12 mode —		
		All to be made of aluminum.		

Jaty

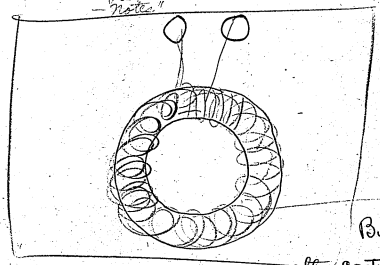
[ON BACK OF PRECEDING PAGE]

Yhes are given out
on contract to
Mr Brunecke for
$12 on each

D
1902

"West Orange -
Lab
Notes"

Bismuth
Induction Coil



Ring Cast of
Bismuth. 3/8 square -
after casting round edges & scrape

with Tape then wind 3 layers
of Silk insulated NO 20 or 22
Copper wire. Secure ring to a
board & have 2 binding posts
for the wire

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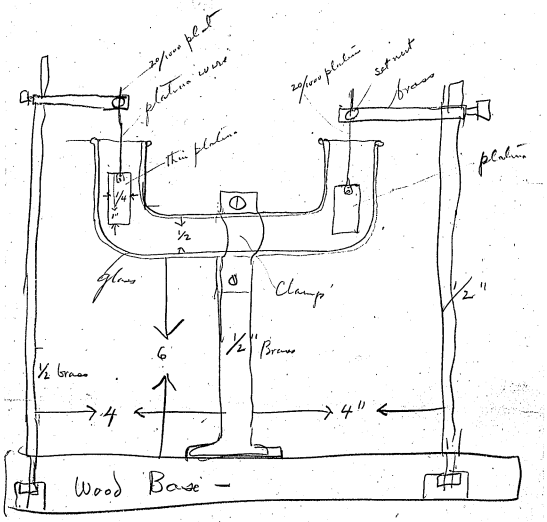
Summary for March 5, 1902 J.E.B.

Bismuth Ring

D
1902.

U Cell —

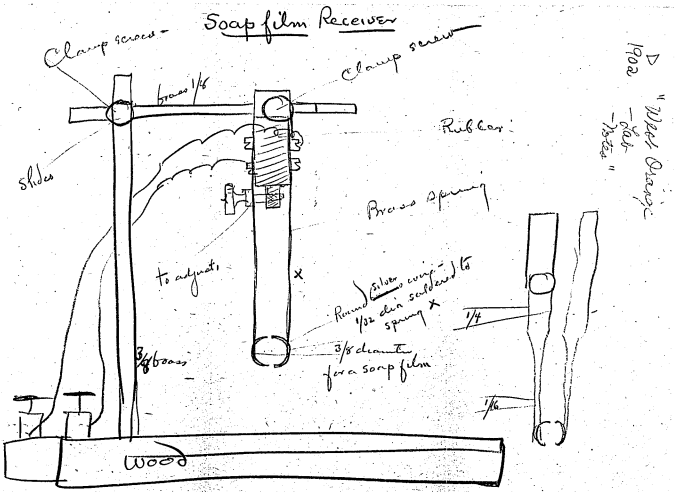

20/1000 platinum
platinum wire
20/1000 platinum
sediment
brass
thin platinum
platinum
1/4
1/2
glass
Clamp
1/2"
1/2" Brass
6
1/2 brass
4
4"
Wood Base —

[ON BACK OF PRECEDING PAGE]

U Bell

Model Furnished

Drawing Furnished March 3 1902


Soap film Receiver
Clamp screw
Clamp screw
brass 1/8
Slides
Rubber
Brass spring
to adjust
Round glass cover 1/32 thick soldered to spring
3/8 diameter for a soap film
3/8 brass
Wood
1/4
1/16
1902
"Wood Design - Glass - Water"

[ON BACK OF PRECEDING PAGE]

Formal Drawing
March 3 1902
J. J. Gill

Soap Film Receiver

Model Furnished

(1902) D 1902 West Orange – Lab – Notes

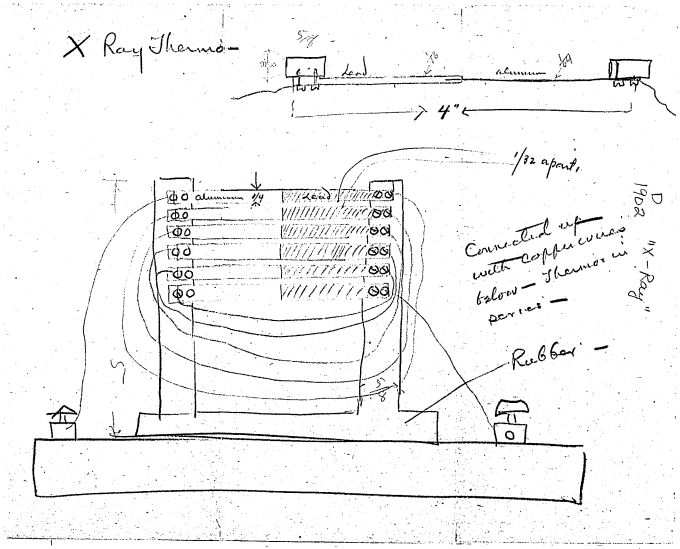
Make about 2 grammes of the following filings passing 150 mesh with all the filings out finer than 200 mesh. put each kind of filings in a homeopathic vial, make a wood holder with holes bored into it to hold vials & have covers – clean tile perfectly after each metal

Following filings wanted,

Silver, Lead Tin, Zinc, platinum Copper Cadmium Bismuth – Antimony, Aluminum, Magnesium, Iron, Nickel, Cobalt, Tellurium, gold, ~~[illegible]~~ Iron Sulphide, Iron pyrites, Port Henry Magnetite, Pyrusolite, galena, Calcopyrites, pyrohotite, peroxide of lead, powdered lamp filament from old Edison lamp, graphite, Nitride of Titanium Nitride of iron Brass, phosphor Bronze, Arsenic Sulphide of nickel, peroxide of Silver, Nickel arsenide: Speerylite, Mispickel, Chromium, ~~[illegible]~~ pumice stone soaked in Chloride of platinum & ignited, Lycopodium powder Coated with Silver in Vacuum by Wurth Tungsten Bronzes, phosphide of Tin Vanadium Dioxide & Vanadium Trioxide

Make ~~[illegible]~~ two more Electric furnaces like the one you made with Lime Blocks

But make the Clamps so any size from 3/4 inch to 1 1/2 inch Carbons Can be clamped Have the Carbons swing up just as in the first one, the height etc is OK —

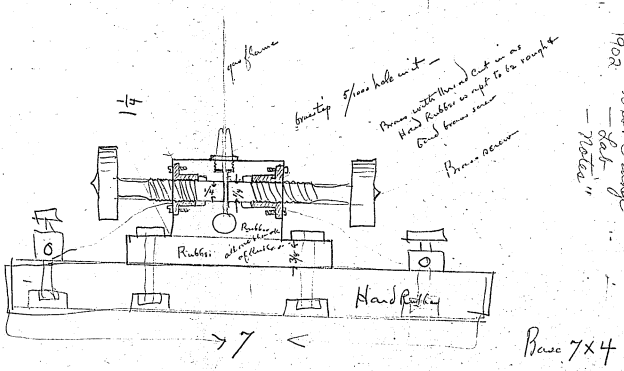

X Ray Thermo-
lead
aluminum
4"
1/32 apart.
aluminum
lead
Connected up with copper wires below — Thermo in series —
Rubber —
Proj. X-11
1962

[ON BACK OF PRECEDING PAGE]

Furnished Drawing March 5 1902

X Ray Thimo

Model Furnished



gas electrification apparatus

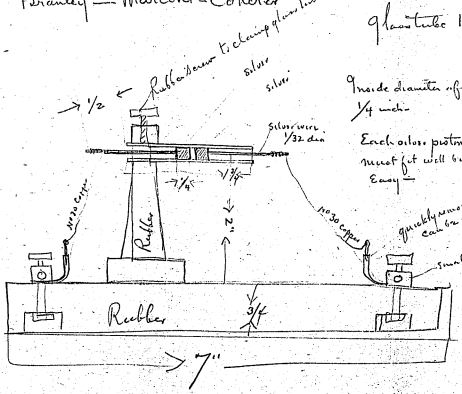
D. "Wind Gauge" — Shot — "Motor"
1902

Filed: D 1902

"Branley-Marconi Coherer"

Branley — Marconi - Coherer

glass tube 1 3/4 long



Inside diameter of glass tube 1/4 inch

Each silver piston 1/4 long — must fit well but go into out easy —

"Wires Orange - Red - Pieces"

D 1902

Make 20 tubes with pistons 00 & can employ 20 different things between the pistons — Marconi uses silver filings — want to test one tube & clear quickly put in another —

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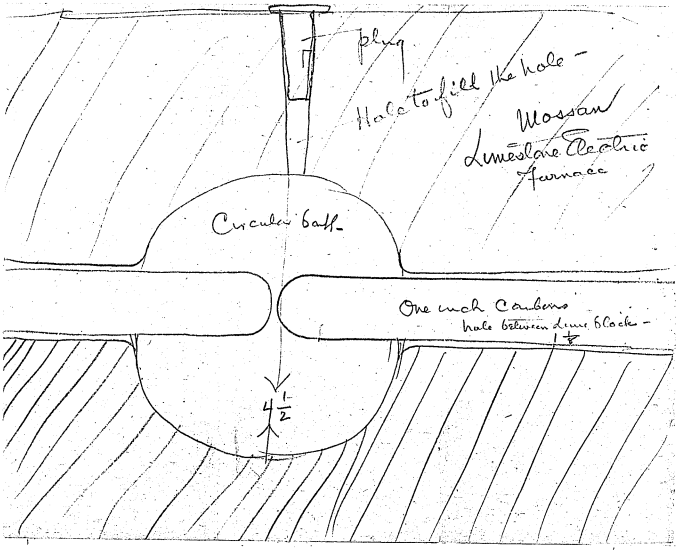
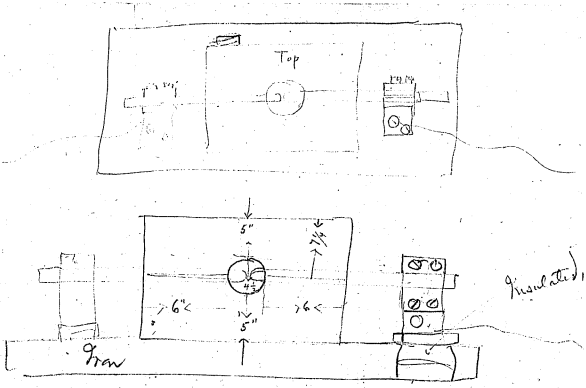
Branley Marconi Coherer

Model Furnished

Furnished Drawing March 5 1908

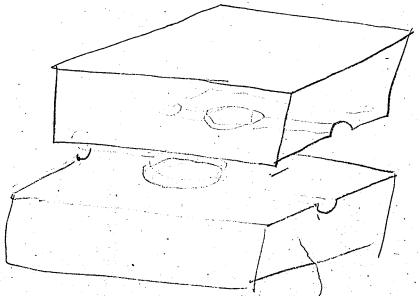
J. H. B.

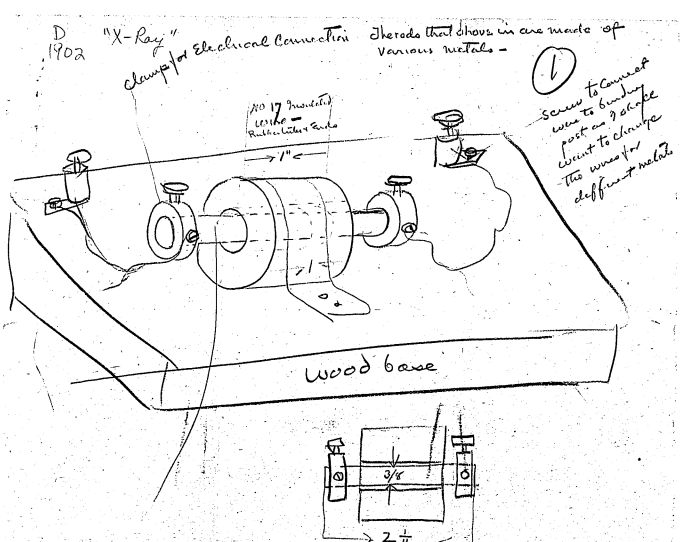

plug
Hole to fill the hole -
Massan
Limestone Electric
Furnace
Circular ball -
One inch Carbons
hole between Lime Blocks -
1 1/2
4 1/2



Want to use 100 amperes 110 volts —

The lime is to be in two solid blocks — get it from Alexandroville, ~~and~~ tell Darling you want 2 pieces of clear magnesian limestone,




D
1902
"X-Ray"
clamp for Electrical Connection
Rods that throw in are made of various metals -
1
Screws to connect wire to binding post on 2 clamps circuit to change the wires for different metals
No 17 Insulated wire
Rubber tubing Ends
1"
1
wood base
3/8
2 1/4

2

(2)

Make rods to go in the Cylinder of the following materials, I think Can probably do it best in Fletcher furnace in Chemical building in Berge

some can be made without Casting

Copper	Brass	Sulphur (Cast)
Zinc	Sulphide of Iron (Cast)	
Cadmium	" Copper "	
Tin	" Nickel "	
Lead	" Lead "	
Antimony (Cast)	" Silver "	
Bismuth "	" Tin "	
Nickel	" Antimony "	
Bismuth	" Mercury "	
Aluminum	Phosphide of Iron "	
Magnesium	Copper "	
Carbon – (Electric Light Carbon)	Nickel "	

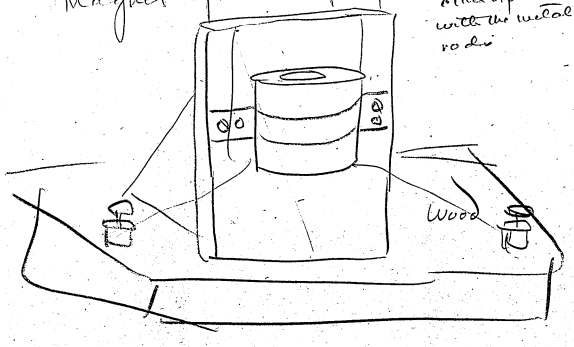
Mercury in glass tube with wires Thro' glass

Silver

3

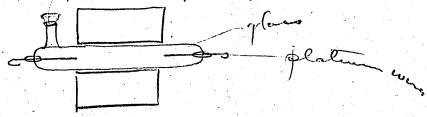
Make another Base with the Magnet panel upright = I want to try other Experiments with the metal rods

same size



(4)

Have Daily make 20 tubes to slide on the magnets, thus open so I can put liquids in flame out the end so can use a small cork.



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Finished Evening March 5 1902
J. E. C.

Induction Coil
with Multi Metals

Model Furnished

D
1902

X-Ray

Number them

No 1 Vacuum

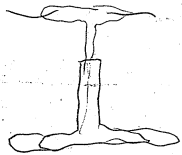
2 "

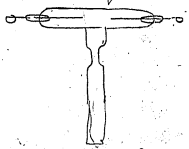
3 "

4 "

5 "

6 X Ray Vacuum





actual Size

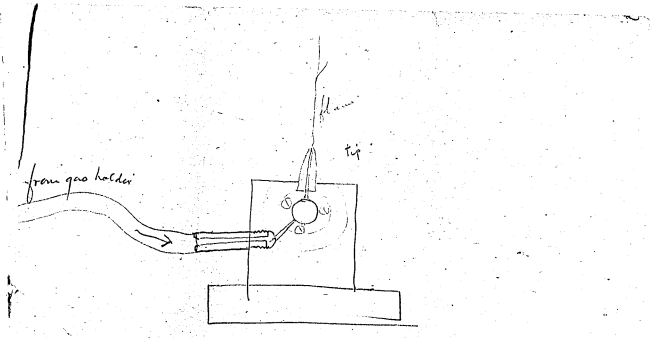
put 6 on the pump at once —
when spark spreads out from the wire
to glass seal one off — Then when it
gets thinner seal another, Then
after a while another The last
one to reach the X ray point
Heat all of them while exhausting

[ON BACK OF PRECEDING PAGE]

Ray Spark tubes

Model Furnished

Forwarded and filed March 11 1902 J.S.C.



The gas passes up to the chamber between the ends of the screws & thence through the 5/1000 hole in the tip - the flame moves up & down when a static current passes from screw to screw — must be no leaks —

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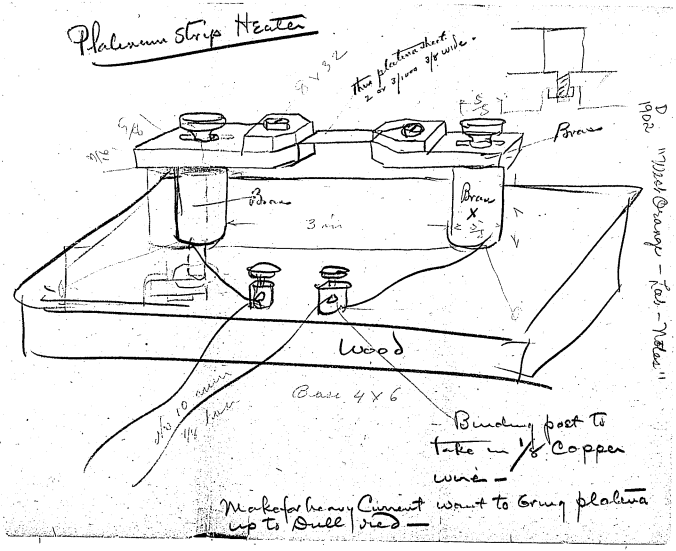
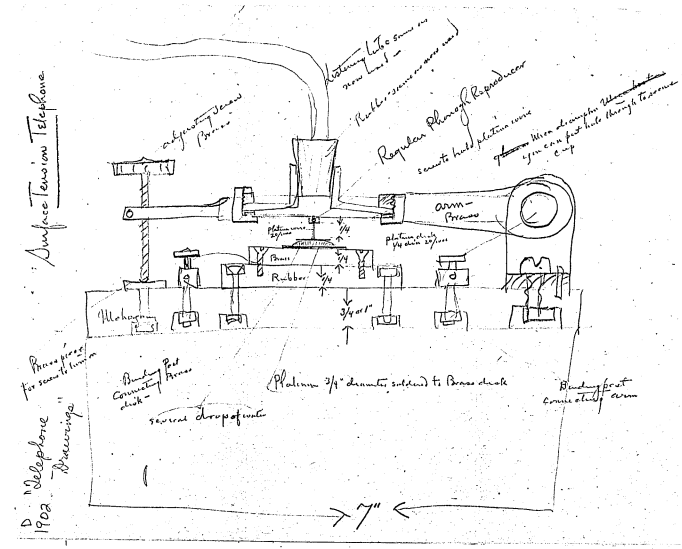
Eliminated Drawing
March 11, 1902
H. F. C.

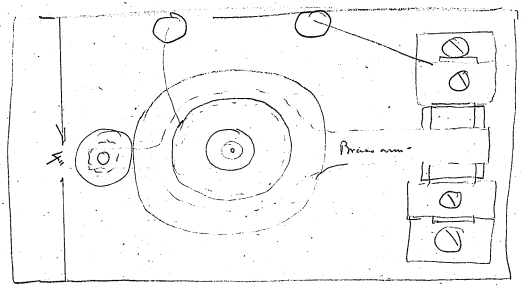
Gas Electrolytic Apparatus

Model Furnished

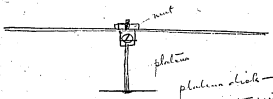


D
1902
"Wash Orange - Red - Yellow"


Surface Tension Telephone
Rubber
Mahogany
3/4"
7"
arm
Brass
Platinum 3/4" diameter, soldered to Brass disk
Brass press for secure tension
Brass Pot Connecting Brass disk
Several dropping tubes
Blind foot connecting arm
D. "Telephone Receiving"
1902



Top view



plaitum stick —
no other metal to be used
Holes pt in stick + wire rivets over
no solder used —

[ON BACK OF PRECEDING PAGE]

Surface Tension Telephone

Model Furnished

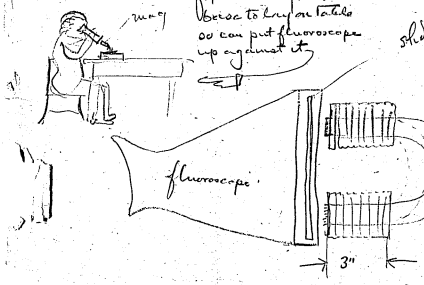
Furnished Drawing
Above of 12 1902
A. G. Bell

D
1902 "Fluoroscope"

Magnet for Fluoroscope

fix the magnet on a wooden
block to lay on table
so can put fluoroscope
up against it

slide with crystals in.



core 1 inch dia
made of No 20 or 22
iron wire & taped —
then 3 or 4 layers
of No 16 wire
wound around —

Make the magnet so it will be
about the same relative size to
the fluoroscope you are going to make
I will use the regular fluoroscope

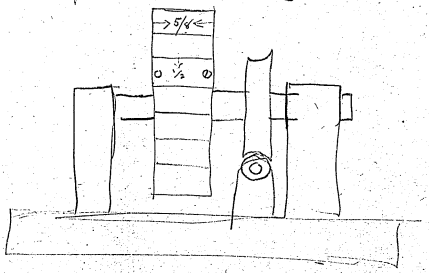
[ON BACK OF PRECEDING PAGE]

Drawing Finished March 21

J. H. Ott

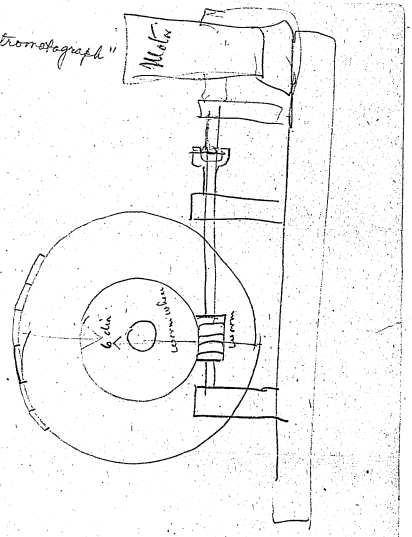
Model Finished
April 19 1902

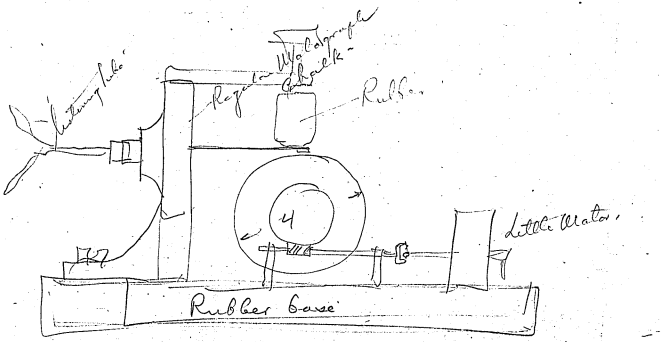
The wheel is of brass it has 36 sections each section of a different metal or material — These are to be either screwed on or fastened by solder or otherwise. They must butt at the edges so the surface of the whole wheel will be smooth, about 1 or 2 Revolutions per minute will be enough —



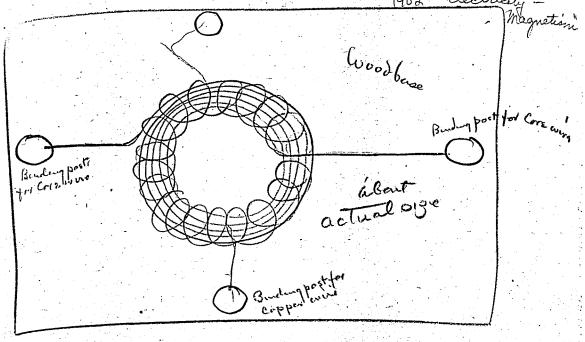
I shall want to put a band of paper around the circumference of the wheel & fasten it like we used to fasten the tin foil in old phons. a simple break in smooth surface will do no harm where it is used —

D
1902 "Electrometagraph"




Rubber Base

1902 "Electricity — Magnetism"



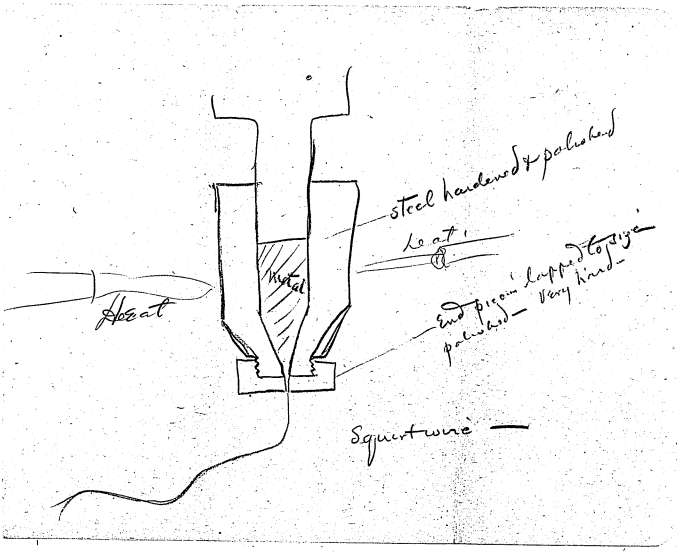
This is an important device. It is a transformer with Cores made of insulated wires of different metals, & over this is wound at right angles ~~and at~~ after taping — 2 layers of No 17 or 18 silk insulated Copper wire —

2. (2)

for making the core use wire anywhere from 1/32 dia or finer and in the case of the metals which are easily got in wires make the diameter of core 3/8 but where you have to squirt the metal a 1/4 inch diameter will answer — In all cases the wire must be insulated just like magnet wire — We had a wire covering machine once that could be rigged up if not you will have to find some way of insulating it = you can use for iron core insulated iron wire which you can buy I think, Bonnet wire,

Make the following transformers this way — all on separate cases —

~~Copper~~ The cores to be Iron, Copper, Zinc (wire or strips) Cadmium, Lead, Tin, Aluminum, Magnesium, Cambry Aluminum ~~of Magnesium~~ wire, Nickel, Cobalt (drawn thin) Silver 11 transformers


steel hardened & polished
Coat
Metal
Heat
End piece dropped to size
polished very hard
Squirt wire

[ON BACK OF PRECEDING PAGE]

Drawing Finished
March 26 1902

Model Finished April 10. 1902

The metals to be used are — Multiple Metal Wheel

1 Aluminum
2 Antimony
3 Bismuth
4 Cadmium
5 Graphite
6 Cobalt
7 Copper

8 gold plated brass
9 Iron
10 Steel, Tool
11 Lead
12 Magnesium
13 Nickel
14 Platinum

15 Silver
16 Tin
17 Zinc
18 Tellurium
19 German Silver
20 Brass
21 Copper got hot + rubbed with Sulphur
22 Manganin, Bergman sent a lot for Rosenthal
23 Type metal
24 Solder
25 Cadmium Tin solder used in Storage Battery

put brass in the spare places

[ON BACK OF PRECEDING PAGE]

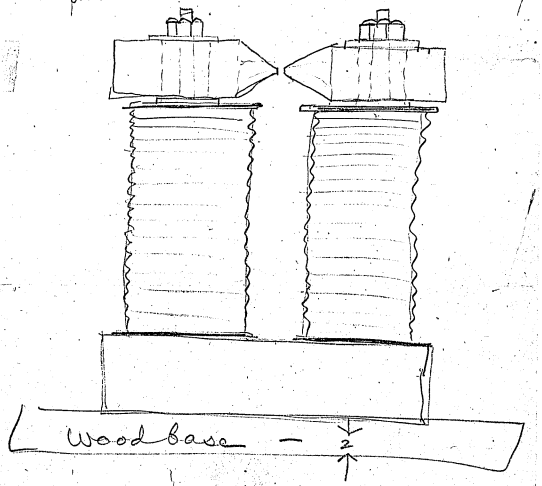
Model Finished April 18.

Multiple Metal Wheel

Finished Drawing March 28 1902

J.F.M.

Field Magnet from a No 2 3 or 4
Edison Dynamo — Think we have one
with moveable pole pieces that can be brought close in or far away
pointed.



[ON BACK OF PRECEDING PAGE]

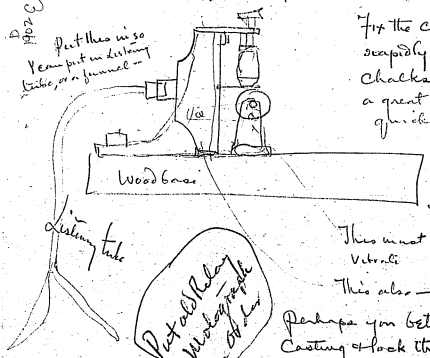
Found two Cores made prior
extension April 4. 1902 J.F.C.

Big Magnet

Mala-graph

Fix up Regular Mala-graph with worm + handle for hand turning, put it on good size Mahogany Base and stiffen it up so the diaphram holder is very stiff

Fix the chuck shaft so I can rapidly remove & replace chucks as I want to test a great many different kinds quickly —



put wood screw holes in base so it can be screwed to table —

This must be very stiff or it will vibrate

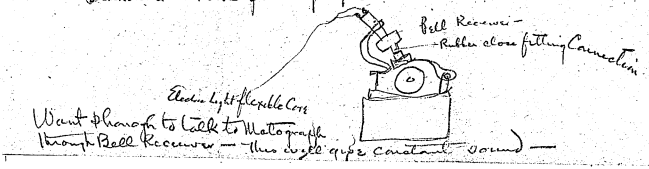
This also —

Perhaps you better make a brass Casting + lock the chuck shaft upright + diaphm together =

Electromotograph

Find a lot of our old Telephone Coils with primaries of various resistances and having some with a secondary alone + some with a secondary + tertiary coil — test them out + put them on Mahogany bases with good binding posts want 1/2 dozen varities —

Get a Bell Telephone-Receiver — + fix it so it can be attached + travel with the reproducer of a standard or Home phonograph —



Want phonograph to talk to Mutograph through Bell Receiver — thus avoid quite constant sound —

Make a Chalk Mould. so that there will be only 1/16. to turn off on a side to get right size get a tool made to go in Lathe provided with a phonograph shaving Sapphire to turn the Chalks —

The Mould should be strong so it can be worked on by screw press — You better make a tool with Cast iron or some Chalk to see how deep you have got to make the mould to get the right length after its pressed — you should allow 1/8 off each end to true chalks up — Get some & polish die & punch highly & make them quite hard get phonograph from Edison —

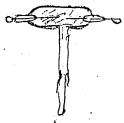
[ON BACK OF PRECEDING PAGE]

Furnished Mimeograph Drawing April 5.1902

J. B. C.

Mimeograph

D
1902 X-Ray



actual size

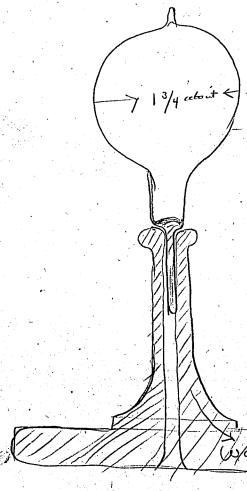
50 of these

to be filled with Crystals
& exhausted to X ray
Vacuum - these got ready
so I can fill with Crystals
when I return in April

[ON BACK OF PRECEDING PAGE]

Models Finnished
April 7 1902
J.E.C.

D
1902 X-Ray



Vacum bulb
Exhausted very high
~~about~~ above X ray
point if possible for 3
bulbs & 3 bulbs exhausted
to X ray point –
One stand will do

Dally can put on a bulb with
wires in along with
those & tell when X
ray point is reached
then cut off
3 & then run
till tube shows
nothing & cut off
the other 3 &

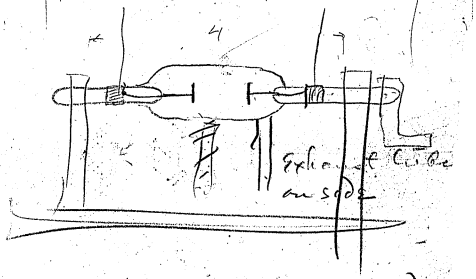
Mark X ray point bulbs
X Ray bulb – the other Beyond X Ray

[ON BACK OF PRECEDING PAGE]

Model Finnished
April 7 1902
J. F. O'H.

D
1902

X-Ray
5 1/2



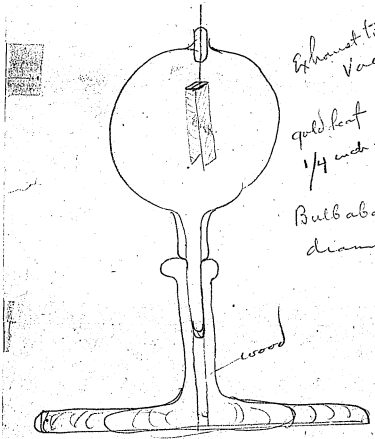
1/2 doz — 2 exhausted

beyond X ray & if to X ra

John Ott has drawing
for the rest —

Dalley D 1902 Electricity - Electrometer A

Make me 3 gold leaf Electrometers



Exhaust to high vacuum

gold leaf 1½ long ½ wide 1/4 inch apart.

Bulb about 2½ inch diam

[ON BACK OF PRECEDING PAGE]

Model finnished April 8 1902

Electometer

J. S. C.

D
1902 "X-Ray"

Want an X Ray Induction Coil Medium size
with air break all ~~mounted~~ ready
to be rigged up when I return
also 1/2 dozen small & large
X Ray tubes in Box —

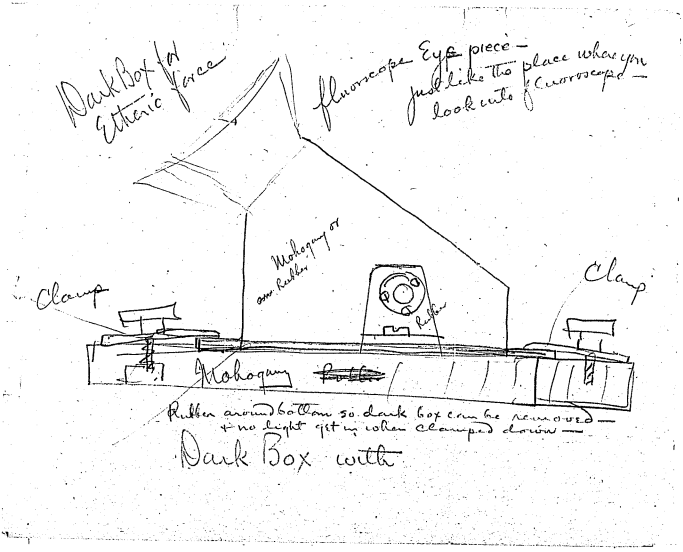
Find one or two of our old tuning
forks with Magnets + Contacts or
also Couple of vibrating reeds
with Magnets & put them in
order —

[ON BACK OF PRECEDING PAGE]

This I ordered they
sent it up from Pharm Works
in such bad condition I
had to send it back

Because pure drum [illegible]

X Rec'd Oct. - Dec. —
Tuesday (Oct 6)


Dark Box for Etheric force
fluoroscope Eye piece — just like the place where you look into fluoroscope —
Mahogany or some rubber
Clamp
Clamp
Rubber
Mahogany
Rubber around bottom so dark box can be removed — + no light getting when clamped down —
Dark Box with

[ON BACK OF PRECEDING PAGE]

Ink Box for Etheric Force

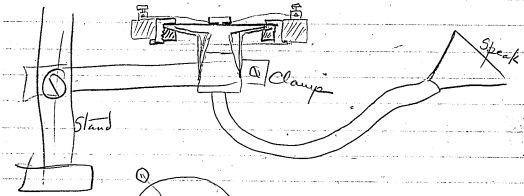
Finished Drawing April 12 1902

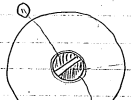
Fin Model April 28 1902

D
1902 "Phow.-Drawings"

Finnished April 21 1902

J. F. Ch.





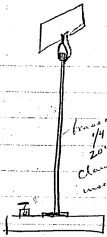
Rubber ring 3/8 dia
silver foil on glass but split
with 1/32 of inch between the
split - one half of silver is
Connected to one binding post
by No 36 Cop over another 1/2
to the other binding post

The Cup + silver shellacked to the glass silver
powder is to go put in Cup the vibrations
disturb the silver. -

D
1902

W.O. – Lab – Notes

→ 4X4-
about 20/1000 thick



2 Stands,

following plates: Iron, Nickel, Lead, Zinc, Tin, Brass, Aluminum, Magnesium, Copper, silver, Cadmium, pressed graphite,

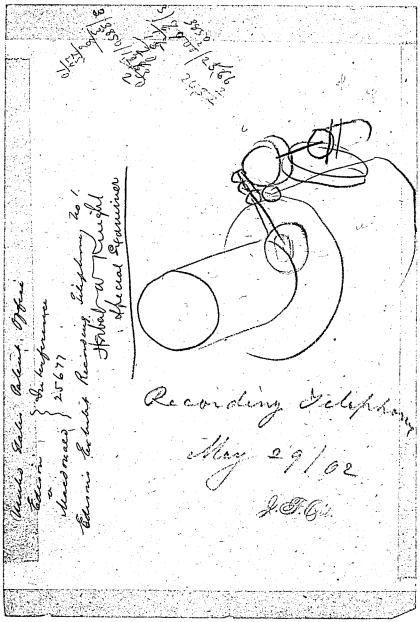
"Base 10" x 10"

[ON BACK OF PRECEDING PAGE]

Furnished Model
April 28 1902

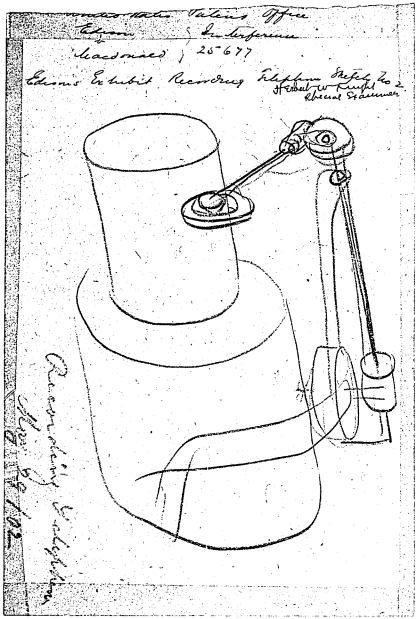
J. F. C.

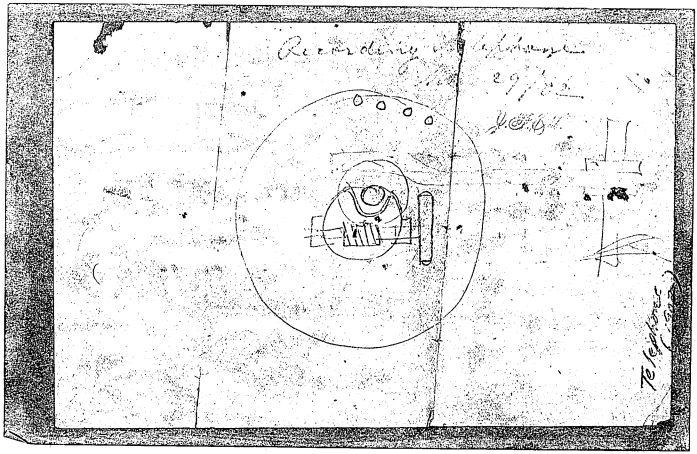
D
1902 "Telephone – Drawings"
See also, Electromotograph



D
1902

"TELEPHONE —
Drawings"




Recording telephone
Telephone
Cases

D
1902 "Electromotograph"

John Ott –

Make Molograph pens
of Port Henry Magnetic ore, get a crystal
there is some in top floor Library
among the new ores –

Another pen of Iron Pyrites +
" Monosulphide of Nickel.
" gold –

May 1902

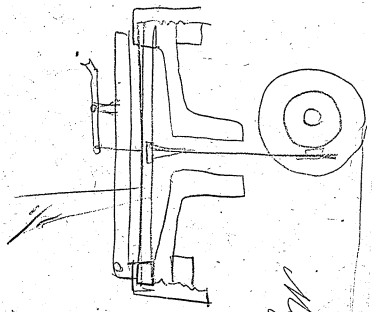
J. F. Ott.

Made Mole. Cabinet Office
Ex. – Electromotograph
Lecture – 25 (77)
Return to Lect. Rect. – Lect. Rect.
Hold – until Lighted
Special Reminder

D
1902 Telephone – Drawings

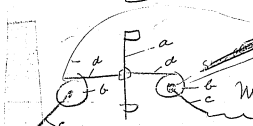
United States Patent Office
Edison
vs
Macomber
Interference
25677

Edison's Exhibit Showing Telephone Patent No 3
Herbert W. Wright
Special Examiner



May 1902

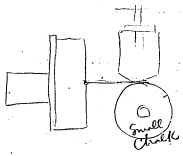
yarn - Make these

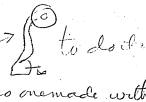


large chalk -

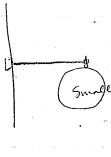
Make this double one

should get twice the volume of frame
so resistance can be got low + both
increase + diminution of friction will help.



use →  to do this with

also one made with
Reg phosph deapne



Ball or rounded point -
50/1000 diamt

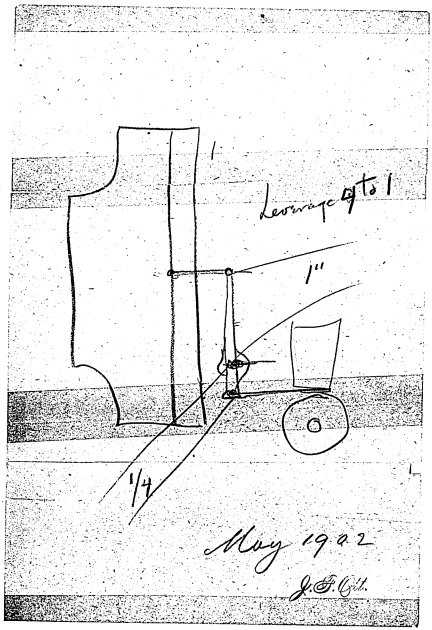
one of platinum
" Pt + Irid
" Iridium
" ~~Osmiridium~~
Nickel

J. F. Ch.

Make these points
about 1/8 to 1/4 long
+ firmly mounted + fastened
" end of arm -

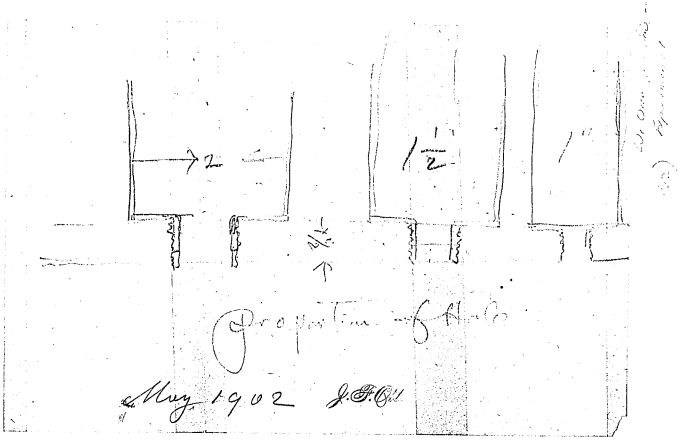
Osmium Iridium

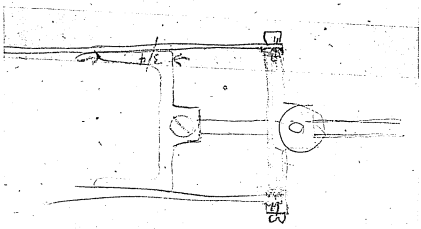
May 1902



W. Orr Jr — Feb. —
(1902) Experiments

May 1902
1024
3.25
5°
8°
16
29
55


2
1 1/2
1"
1/2"
Proportions of Heads
May 1902 J.E.C.



May 19.02

J. F. Ott.

(1902)

John –

Have Freddy Ott & Francke work on these pine, I must go to Cement works Monday Tuesday & Wednesday

Edw

May 1902 S.F.O.

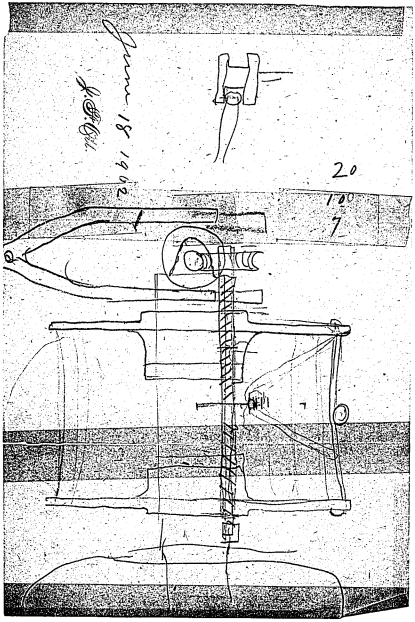
D
1902 "Electromotograph"

John May 1902

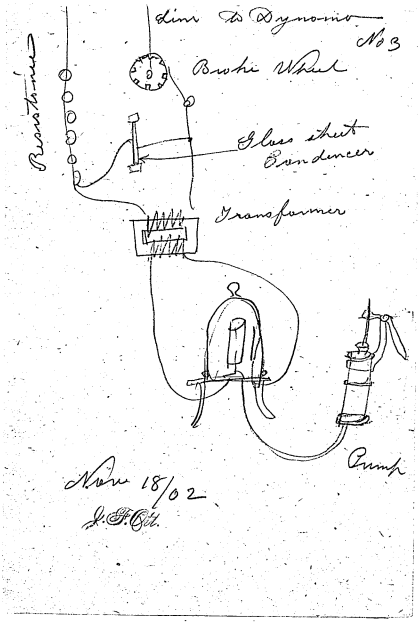
Make following Cylinders for small Mala graph ~~[illegible]~~ make them same size as Charles w Rowe mounted on ~~[illegible]~~ bore them out to size do not turn off on surface ~~[illegible]~~ Freely off will ~~[illegible]~~ turn them to size

Sulphide of Copper
Best Thermo pile of Sulphate makes it for you

Metallic Magnesium
" Aluminum ✓
" Iron or Steel ✓
" Antimony
" Zinc ✓
" Cadmium ✓
" Bismuth ✓
One of Bone ✓
" " Horn ✓
" " Glue
" " Walrus hid
✓ paper, bond paper cut in disks
✓ Mica I will give you a piece to turn it from
✓ Steatite (Soapstone)
French kid leather
✓ Sheepskin parchment cut in disks
✓ Rawhide
✓ Bamboo



(1902) W. Orange Tel. — Experimental



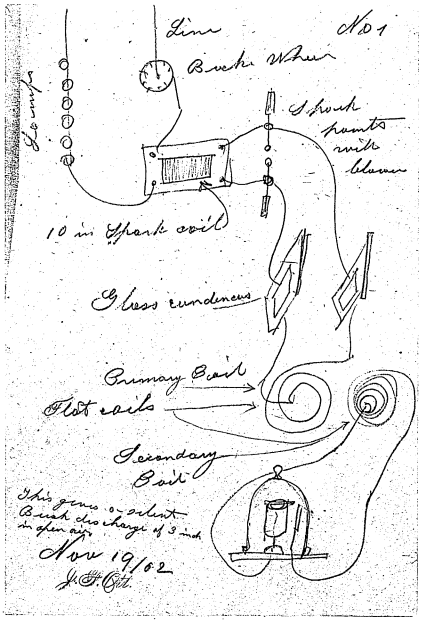
Nov 18/02
L. E. Ott.

Nov 19/02

Mr Edison

Looking through this Electrical World of Nov 29/02, the Plating in Vacuum is old, do you not think it would be best to try every thing so as to cover up all loose holes, I have made up two styles make 1 and 2 that look very fair, I told Mr Smith to try this perhaps you can give us some points on this

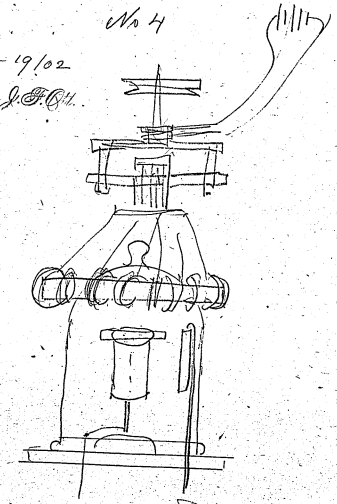
J S Ott


Line
No 1
Buck Wheel
Spark points with blower
10 in Spark coil
Glass condenser
Primary Coil
Flat coils
Secondary Coil
This gives over 2 inch Brush discharge of 3 inch in open air
Nov 19/02

No 4

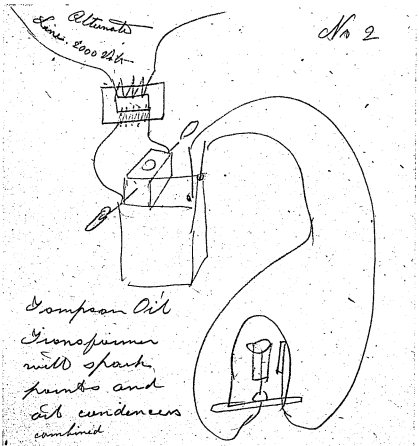
Nov 19/02

J. F. C.



In this device the Magnet does not revolve but the lines of force do

No 2



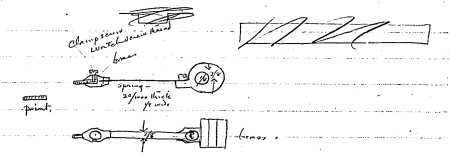
Tompson Oil
Transformer
with spark
points and
oil condenser
combined

This gives a vacuo discharge in
open air

Nov 20/02

J. T. O'H

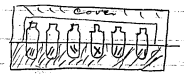
(1902) P 1902 Pen, Chemical



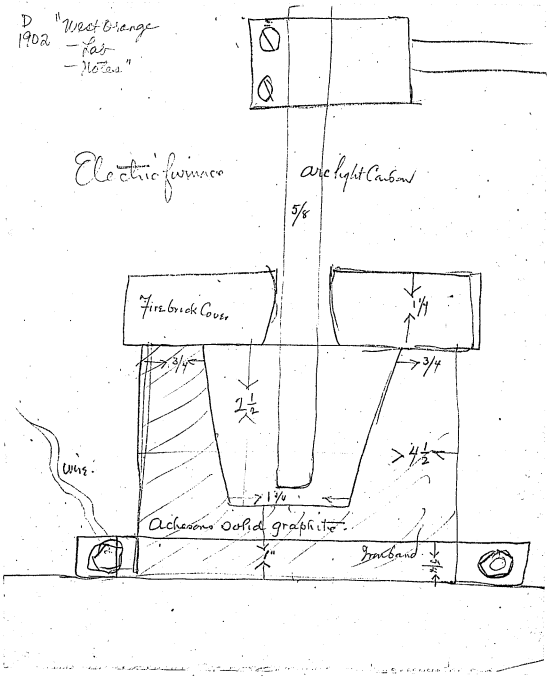
Chemical recording pen holder = Make one holder, and following points — 3 of each

Platina, Silver, Copper, Lead, Zinc, Cadmium, Bismuth Antimony, Aluminum, Magnesium, Tin, Iron, Nickel, Cobalt Tellurium 6 points — gold — Silicon, Graphite, Phosphide of Lead Phosphide Iron, Sulphide of Lead, Sulphide of Iron, Sulphide of Nickel, Pyrosulite, Thallium, Indium, Arsenic, Chromium — Tungsten, Phosphide of Tin, Tungsten bronzes, Vanadium Dioxide.

Make a board + bore little holes in to put homeopathic vials of the smallest size actual size, Reversed Can get them — put points in different bottles + label them + cork them

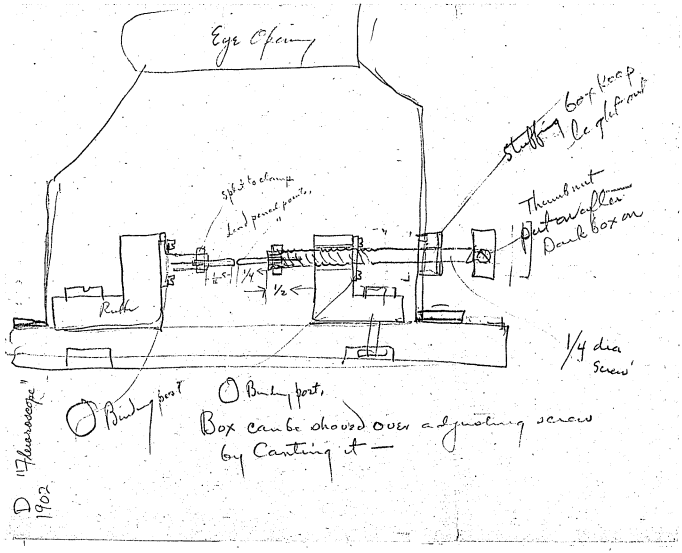


D
1902 "West Orange
— Lab
— Notes."



Binding Posts used one for Each angle post

"The Wireless" A 1908


Eye Opening
Box Hook
Thumbnut
Dark Box on
1/4
1/2
Ruler
1/4 dia
Screw
Bushing post
Bushing post,
Box can be shoved over adjusting screw
by Canting it —
"Phenoscope"
D
1902